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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/441,294	11/16/1999	PAUL RAYMOND HIGGINBOTTOM	169.1516	4133

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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 10/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/441,294

Applicant(s)

HIGGINBOTTOM ET AL.

Examiner

Hussein Akhavannik

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 14-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/16/1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of the Group I invention (Claims 1-13) in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 14-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups II-IV, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No.7.

Applicant's amendment to cancel claims 14-43 as being drawn to a nonelected invention in response to this office action is required.

Specification

2. The disclosure is objected to because of the following informalities:

On page 17, line 7, the matrix of cells "1011" should be changed to "1001" in order to correspond to figure 10.

On page 23, line 30, the "encoder 1708" should be change to "encoder 1709" in order to correspond with figure 17.

Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show 1102 as described in page 17 of the specification and 1621 as described in page 21 of the specification.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

The drawings 23a and 23b are objected to because the reference number 1404 should be changed to 1407 to correspond to the specification of this application.

The drawings 3 and 4 are objected too under 37 CFR 1.83(a) because they fail to show an inner equilateral triangle 33 representing a boundary upon which the mark elements are centered as stated on page 5, lines 23-24. The elements are not centered on equilateral triangle 33 in drawings 3 and 4.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

Allowable Subject Matter

4. Claims 7 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined

was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 4, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Donnelly et al (U.S. Patent No. 6,002,800).

Referring to claims 1, 4, and 9, processing the image to provide an encoded representation of the image at a predetermined resolution is explained by Donnelly et al in column 7, lines 40-43 and illustrated in figure 1 as the scanner (2). Detecting coordinate positions for each of the elements of the mark embedded in the image by applying at least one mask is explained by Donnelly et al in column 7, lines 8-15 and illustrated in figure 10. In figure 10, two templates are detected and each of their center points is determined in order to calculate the positional vector (58). The template, which corresponds to the mask explained by the applicant, is compared with the cells of the input image, which correspond to pixels. Determining a set of spatial features representing a spatial arrangement of the detected elements is explained by Donnelly et al in column 6, line 64 to column 7, line 7 and illustrated in figure 10. The spatial feature of the detected templates is the positional vector, which comprises of a length and direction. Comparing the spatial features to a known set of spatial features is explained by Donnelly et al in column 7, lines 3-7. When the positional vector matches an expected vector, then a match is determined to have taken place. Donnelly et al further explain using "merit" values, which correspond to a confidence level measure, based on the position of the detected templates in column 7, lines 50-65.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3, 5-6, 8, 10-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donnelly et al in view of Inaoka et al (U.S. Patent No. 6,351,550).

Referring to claims 2, 5, and 10, the spatial features determined being features indicating the angular distribution about a predetermined origin for each mark is not explicitly explained by Donnelly et al. However, Inaoka et al do explain an angular distribution of detected elements about an origin in column 20, lines 9-22 and illustrates such a distribution in figure 22d. The angles α and β are determined from a predetermined origin and are used to determine whether the extracted feature points of a target bill correspond to those of a reference bill. To determine the authenticity of a document using several detection elements, it is well known in the art to determine a relationship between the elements to reduce the probability of a false detection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the angular distribution of multiple detected elements to determine the authenticity of a document.

Referring to claims 3, 6, and 11, the angular distribution comprising of a signature indicating a discrete angular distribution is not explained by Donnelly et al, but is illustrated by Inaoka et al in figure 22d. The angles α and β are discrete angles as the angles determined by the CPU (15) are not exact. Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention was made to use discrete angles, as any angle that is calculated is not exact and therefore discrete.

Referring to claims 8 and 13, comparing the signature of the determined spatial feature with a corresponding signature of a known mark is not explained by Donnelly et al, but is explained by Inaoka et al. Inaoka et al explain that the angles and distances between the four feature points extracted from the reference bill are calculated by the CPU (15) in column 20, lines 9-22. Then, Inaoka et al explain that the same information is computed from the target bill in column 20, lines 23-30. Finally, the positional data of the target bill is compared with the known position data of the reference bill to determine whether the reference points correspond to each other, as explained by Inaoka in column 20, lines 31-39. Comparison of two signatures, or spatial data, is common in the art to determine whether two documents correspond to each other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compare the signature of a document, which is input to a signature of a known mark to determine whether the input document contains the known mark.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fan et al (U.S. Patent No. 6,067,374) – To exhibit rotation of a template to determine the relative rotation of the detected template.

Pincoffs et al (U.S. Patent No. 3,638,188) – To exhibit the detection of image points and the angular distribution of the image points within a document.

Suzuki et al (U.S. Patent No. 5,621,810) – To exhibit detecting multiple seals of a known color through the use of masks and determining the positional relationship between the seals.

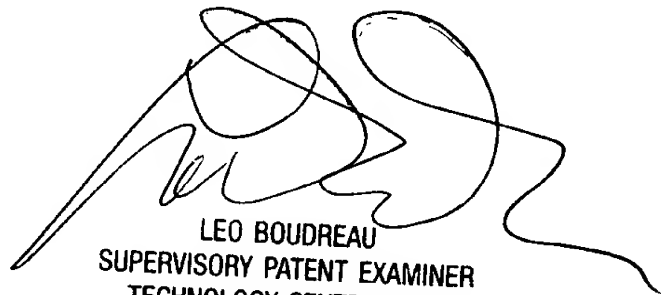
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Hussein Akhavannik
October 23, 2002

H.A.



LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600